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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/628,921	07/29/2003	John J. Breen	16356.817 (DC-05156)	8117
27683	7590	11/17/2004		
HAYNES AND BOONE, LLP 901 MAIN STREET, SUITE 3100 DALLAS, TX 75202			EXAMINER GRANT, ROBERT J	
			ART UNIT	PAPER NUMBER
			2838	

DATE MAILED: 11/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/628,921	Applicant(s) BREEN ET AL.	
	Examiner Robert Grant	Art Unit 2838	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE Three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7 and 18 is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-17, 19-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>12-29-03</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Ac-Dc Adapter and Smart Battery Charger Integration Scheme.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1, 3 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Sainsbury et al. (US 6,104,162) .

As to Claim 1, Sainsbury discloses a method for converting an alternating current (AC) input to a direct current (DC) output, the DC output providing power to a load, the method comprising:

Receiving the alternative current (AC) input (Figure 3, element 11);

Receiving a first feedback signal indicative of a target voltage required by the load (Column 5, lines 17-21);

Receiving a second feedback signal indicative of the DC output (Column 5, lines 1-2); and

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Generating the DC output responsive to the first and second feedback signals, wherein the DC output is maintained within a predefined range of the target voltage (Column 4, lines 62-66)

As to Claim 3, Sainsbury discloses the method of claim 1, wherein the second DC output provides power to the load, wherein the load is a battery (Figure 6, Element 41).

As to Claim 4, Sainsbury discloses the method of claim 3, wherein the DC output is suitable to charge the battery (Column 5, lines 59-62).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sainsbury (US 6,104,162) as applied to Claim 1 above, and further in view of Wilcox et al. (US 5,994,885).

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As to Claim 2, Sainsbury discloses all the limitations of claim 1, as described above. However, Sainsbury does not disclose wherein a difference between the DC output and the target voltage is always positive while providing a charge to the load. Wilcox discloses wherein a difference between the DC output and the target voltage is always positive while providing a charge to the load (Column 4, line 30-33). It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify Sainsbury's charger with Wilcox's design to adjust the charging parameters in this fashion to make up for any losses.

Claims 5, 6, and 8-11 are rejected under 35 U.S.C 103(a) as being unpatentable over Sainsbury (US 6,104,162) as applied to Claim 1 above, and further in view of Shyr et al. (US 5,903,764)

As to Claim 5, Sainsbury discloses all the limitations of claim 1, as described above. However, Sainsbury does not expressly disclose wherein upon a loss of the first feedback signal the second DC output is maintained to a predefined voltage. Shyr discloses in column 1, lines 59-65, a smart battery which periodically responds to polling (i.e. feedback signals are not always present). It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify Sainsbury method and utilize a smart battery as taught by Shyr, since periodically sending a feedback signal is more efficient.

As to Claim 6, see remarks for claim 5. A smart battery is capable of sending a signal indicating the voltage required and receiving that voltage back. If the signal is no longer present the battery will still be receiving that voltage.

As to Claim 8, Shyr discloses in column 1 lines 63-65 that the first feedback signal is received from the load.

As to Claim 9, Shyr discloses a smart battery, which would inherently have a controller for the gathering and transmitting the status and requirements of the battery.

As to Claim 10, Sainsbury discloses all the limitations of claim 1, as described above. However, Sainsbury does not expressly disclose wherein the first feedback signal is received as a single digital signal, a pulse width modulation (PWM) signal, an analog signal, a digital signal, a digital signal superimposed on another analog signal, or an SMBus signal. Shyr expressly disclose Column 6, lines 60-65 wherein the first feedback signal is received as a SMBus signal.

As to Claim 11, Sainsbury discloses all the limitations of claim 1, as described above. However, Sainsbury does not expressly disclose wherein the DC output is maintained at a predefined voltage upon completion of providing a charge to the load.

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Shyr expressly discloses figure 10a, element 374, wherein the DC output is maintained at a predefined voltage upon completion of providing a charge to the load (i.e. trickle charge).

Claim 12, 14, and 15 are rejected under 35 U.S.C 103(a) as being unpatentable over Sainsbury (US 6,104,162) in view of Hatular (US 6,184,660).

As to Claim 12, Sainsbury discloses an integrated alternating current (AC) to direct current (DC) adapter comprising:

A rectifier module operable to receive an AC input and generate a first DC output (Figure 4, element 29).

A converter module operable to receive the first DC output and generate a second DC output responsive to a control signal (Column 5, lines 17-21); and

A controller module operable to receive the first feedback signal input indicative of a target voltage required by a load (Figure 1, Element 27) and a second feedback signal input indicative of the second DC output (Column 5, lines 1-2), the controller adjusting the control signal responsive to the first and second feedback signal inputs, the adjusting of the control signal causing the converter module to maintain the second DC output to be within a predefined range of the target (Column 4, lines 62-66).

Sainsbury does not expressly disclose that said converter is a buck converter.

Hatular expressly discloses the use of a buck converter (Figure 1A., Element 60) to supply power for charging a battery.

It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify Sainsbury's design by replacing his DC-DC converter with Hatular's buck converter so as to accommodate loads with lower voltages.

As to Claim 14, Sainsbury discloses wherein the second DC output provides power to the load, wherein the load is a battery (Figure 6, Element 41).

As to Claim 15, Sainsbury discloses the method of claim 14, wherein the second DC output is suitable to charge the battery (Column 5, lines 59-62).

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sainsbury in view of Hatular as applied to claim 12 above, and further in view of Wilcox et al. (US 5,994,885).

As to Claim 13, Sainsbury and Hatular discloses all the limitations of claim 12, as described above. However, Sainsbury and Hatular do not disclose wherein a difference between the DC output and the target voltage is always positive while providing a charge to the load. Wilcox discloses wherein a difference between the DC output and the target voltage is always positive while providing a charge to the load (Column 4, line 30-33). It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify Sainsbury and Hatular's charger with

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Wilcox's design to adjust the charging parameters in this fashion to make up for any losses.

Claim 16, 17, 19, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sainsbury in view of Hatular as applied to claim 12 above, and further in view of Shyr.

As to Claim 16, Sainsbury and Hatular disclose all the limitations of claim 12, as described above. Neither Sainsbury nor Hatular expressly disclose wherein upon a loss of the first feedback signal the controller generates the control signal to maintain the second DC output to a predefined voltage. Shyr discloses in column 1 lines 59-65 a smart battery which periodically responds to polling (i.e. feedback signals are not always present). It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify Sainsbury method and utilize a smart battery as taught by Shyr, since periodically sending a feedback signal is more efficient.

As to Claim 17, see remarks for claim 16. A smart battery is capable of sending a signal indicating the voltage required and receiving that voltage back. If the signal is no longer present the battery will still be receiving that voltage.

As to Claim 19, Shyr discloses wherein the first feedback signal is received from the load (Column 1, lines 63-65)

As to Claim 20, Shyr discloses a smart battery, which would inherently have a controller for the gathering and transmitting the status and requirements of the battery.

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sainsbury in view of Hatular as applied to claim 12 above, and further in view of Shyr.

As to Claim 21, Sainsbury and Hatular discloses all the limitations of claim 12, as described above. Neither Sainsbury or Hatular expressly disclose wherein the first feedback signal is received as a single digital signal, a pulse width modulation (PWM) signal, an analog signal, a digital signal, a digital signal superimposed on another analog signal, or an SMBus signal. Shyr expressly disclose Column 6, lines 60-65 wherein the first feedback signal is received as a SMBus signal.

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sainsbury in view of Hatular.

Sainsbury expressly discloses a rectifier module operable to receive the AC input and generate a first direct current (DC) output (Figure 4, Element 29);

A converter module operable to receive the first DC output and generate a second DC output responsive to a control signal (Column 5, lines 17-21); and

A controller module operable to receive the first feedback signal input indicative of a target voltage required by a load (Figure 1, Element 27) and a second feedback signal input indicative of the second DC output (Column 5, lines 1-2), the controller adjusting the control signal responsive to the first and second feedback signal inputs, the adjusting of the control signal causing the converter module to maintain the second DC output to be within a predefined range of the target (Column 4, lines 62-66).

Sainsbury does not expressly disclose that said converter is a buck converter, or that the system being powered is an information handling system.

Hatular expressly discloses in figure 1 element 26, an information handling system comprising:

A processor; (inherent to an information handling system)

A system bus; (inherent to an information handling system)

A memory coupled to the processor through the system bus (inherent to an information handling system) (Column 5, Lines 34-40); and

A power supply system operable to provide power to the processor, the bus and memory, the power supply system being connectable to an alternating current (AC) power source, wherein the power supply system includes (Column 5, lines 24-29):

Hatular expressly discloses the use of a buck converter (Figure 1A., Element 60) to supply power for charging a battery.

It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify Sainsbury's design by replacing his DC-DC converter with Hatular's buck converter so as to accommodate loads with lower voltages. It would

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have also been obvious to a person of ordinary skill in the art at the time of the invention that the power system used by Sainsbury could be used to power Hatular's information handling system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Grant whose telephone number is 571-272-2727. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on 571-272-2084. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RG

 11/15/84
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